

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue of: **U.S. PATENT NO. 5, 941,551**)
Inventor: **HARMAN, C. ERIC and WARREN, M. TIMOTHY**)
Issued: **AUGUST 24, 1999**)
For: **EZ HITCH**)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examining the application for reissue of the above referenced patent, kindly amend the patent as follows:

In the Claims:

Kindly amend Claim 1 as follows:

1. (Amended) An improved trailer hitching apparatus comprising:
a plurality of connected guide walls which converge rearwardly into a substantially hemispherical housing having a substantially circular opening into said housing where said guide walls converge;

means attached to said housing for mounting said apparatus to a towing vehicle;

a double-ring coupler device having two substantially annulus-shaped rings, formed so that one outer ring houses the other inner ring as follows: the outer convex surface of said inner ring has the same curvature shape as the inner concave surface of said outer ring, with said outer ring somewhat overlapping said inner ring to hold them together operationally, allowing said outer ring to rotate freely on any axis about said inner ring;

a shaft attached to said outer ring having means to attach said coupler device to a trailer tongue;

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said housing having an inner surface with the same curvature as the outer surface of said outer ring so that said outer ring can rotate freely and smoothly about any axis within said housing;

 said housing having circular surface openings situated opposite each other and said inner ring of said coupler device having a circular hole which aligns with said surface openings as means for insertion of a locking pin device to securely engage said double-ring coupler device within said housing.

Kindly add the following new claims:

2. (New) An improved trailer hitching apparatus comprising:
 first and second walls in opposed, spaced apart relation;
 means attached to said first and second walls for mounting said apparatus to a towing vehicle;

 an outer, substantially annulus-shaped ring having inner walls defining an opening, said inner walls having a concave configuration, said outer ring being configured to be received between said opposed first and second walls;

 an inner, substantially annulus-shaped ring, said inner ring having an opening and an outer convex surface, said inner ring being positioned within said opening of said outer ring, said outer convex surface of said inner ring having substantially the same curvature as said inner concave walls of said outer ring, and said outer ring somewhat overlapping said inner ring to hold them together operationally such that said outer ring can rotate freely on any axis about said inner ring, said inner and outer rings together forming a coupler device;

 means attached to said outer ring for attaching said coupler device to a trailer; and

a locking pin operatively associated with said opposed first and second walls and configured to be received through said opening in said inner ring when said coupling device is disposed between said opposed first and second walls so as to couple said coupling device to said means for mounting said apparatus to a towing vehicle.

3. (New) The trailer hitching apparatus of Claim 2, further comprising a housing, wherein said housing includes an opening configured to receive an end of said coupler device therethrough, and wherein said first and second walls comprise opposed walls of said housing.

4. (New) The trailer hitching apparatus of Claim 2, wherein said locking pin extends along an axis, and wherein said housing comprises walls configured to guide said coupler device into a position such that said opening of said inner ring is aligned with said axis defined by said locking pin.

5. (New) The trailer hitching apparatus of Claim 3, wherein said housing comprises a curved inner surface.

6. (New) The trailer hitching apparatus of Claim 5, wherein said outer ring has an outer convex surface with the same general curvature as the curved inner surface of said housing such that said outer ring can rotate freely and smoothly about any axis within said spherical housing.

7. (New) The trailer hitching apparatus of Claim 3, wherein said housing is substantially hemispherical in shape, and wherein said opening is substantially circular in shape.

8. (New) The trailer hitching apparatus of Claim 7, wherein said housing has a substantially hemispherical inner surface, and wherein said outer ring has an outer convex surface with the same general curvature as the inner surface of said housing such that said outer ring can rotate freely and smoothly about any axis within said spherical housing.

9 (New) The trailer hitching apparatus of Claim 3, wherein said housing comprises an aperture therethrough through which an end of said locking pin is inserted, and

wherein said housing comprises an engagement means situated opposite said aperture for engaging said end of said locking pin;

whereby when said locking pin extends through said aperture, through said opening in said inner ring, and engages said engagement means, said locking pin couples said coupling device to said housing.

10. (New) The improved trailer hitching apparatus of Claim 3, further comprising a plurality of connected guide walls operatively associated with said housing and converging rearward about said opening.

REMARKS

Claim 1 has been amended, and new Claims 2–10 have been added. Claims 1–10 remain in the application for reissue. Examination of the application for reissue of the patent in view of the foregoing amendments is respectfully requested.

Claim 1 has been amended to recite that the housing is hemispherical in shape, rather than spherical. Support for this limitation is found in the drawings of the patent. Claim 1 has also been amended to change “guide walls or flanges” to guide walls. While applicant intends the terms “guide walls” and “flanges” to be synonymous, this amendment eliminates the possibility that the language might be construed as reciting alternative structures and thus render the claim indefinite.

New independent Claim 2 recites an improved trailer hitching apparatus which does not include many non-essential limitations of Claim 1 of the patent. Specifically, new Claim 2 does not include the following features of Claim 1:

- Claim 2 does not limit the structure to which the locking pin is mounted to a “housing,” which suggests an enclosure;
- Claim 2 does not recite guide walls or flanges;
- Claim 2 does not limit the housing to a spherical shape;
- Claim 2 does not limit the opening to a circular shape;
- Claim 2 does not recite structure having an inner surface having a curvature matching that of the outer surface of the outer ring; and
- Claim 2 does not limit the means by which the locking pin engages the apparatus to circular holes.

Rather than reciting a “housing,” Claim 2 recites “first and second walls in opposed, spaced apart relation,” which provides the function of the housing (providing a structure to which a locking pin can be mounted to extend through the central opening in the inner ring, and limiting movement of the inner ring along the locking pin) without requiring an enclosure. New Claim 3, dependent from Claim 2, recites that the device comprises a housing, and that the first and second walls comprise opposed walls of the housing. Support for these limitations is found in the specification and drawings of the patent, and no new matter is being added.

Once the coupler device (the inner and outer ring assembly) is coupled to the housing, the coupler device does not touch the housing so that the housing does not interfere with the free movement of the coupler device. Consequently the only function of the housing walls occurs before the coupler device is hitched, that is, they facilitate hitching the towed vehicle to the towing vehicle. Toward that end, the housing walls guide align the coupler device such that the opening in the inner ring of the coupler device is aligned with the path of the locking pin. New Claim 4 thus recites the configuration of the housing as one which will guide the coupler device into a position such that the opening of the inner ring is aligned with an axis defined by the locking pin. Support for these limitations is found in the specification and drawings of the patent, and no new matter is being added.

New Claim 5 recites that the inner housing walls are curved. This claim does not require the housing walls to be spherical. Claim 6 is dependent from Claim 5 and recites that the outer ring has an outer periphery with the same general curvature as the housing walls. Support for these limitations is found in the specification and drawings of the patent, and no new matter is being added.

Claims 7 and 8 recite features found in Claim 1 of the patent. Namely, Claim 7 recites that the housing is hemispherical, and the opening of the housing is circular. Claim 8 recites the configuration of the outer convex surface of the outer ring as having substantially the same curvature as the inner housing walls. Support for these limitations is found in the specification and drawings of the patent, and no new matter is being added.

Claim 9 is dependent from Claim 3 and adds the additional limitation that the locking pin engages the housing by extending through a hole in one housing wall and engaging an engagement means in an opposite housing wall. Support for these limitations

is found in the specification and drawings of the patent, and no new matter is being added.

Finally, new Claim 10 is dependent from Claim 3 and adds the limitation of the guide walls converging rearward about the opening of the housing. Support for these limitations is found in the specification and drawings of the patent, and no new matter is being added.

In view of the foregoing, Claim 1 as amended and newly added Claims 2–10 are believed allowable. Examination of the application for reissuance of the patent at an early date is respectfully requested.

Respectfully submitted,



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Version with Markings to Show Changes Made

Amendments in the Claims

In accordance with 37 C.F.R. 1.121(c), the following versions of the claims as rewritten by the foregoing amendment show all the changes made relative to the previous versions of the claims.

1. (Amended) An improved trailer hitching apparatus comprising:

a plurality of connected guide walls [or flanges] which converge rearwardly into a substantially [spherical] hemispherical housing having a substantially circular opening into said [spherical] housing where said guide walls converge;

means attached to said [spherical] housing for mounting said apparatus to a towing vehicle;

a double-ring coupler device having two substantially annulus-shaped rings, formed so that one outer ring houses the other inner ring as follows: the outer convex surface of said inner ring has the same curvature shape as the inner concave surface of said outer ring, with said outer ring somewhat overlapping said inner ring to hold them together operationally, allowing said outer ring to rotate freely on any axis about said inner ring;

a shaft attached to said outer ring having means to attach said coupler device to a trailer tongue;

said [spherical] housing having an inner surface with the same [spherical] curvature as the outer surface of said outer ring so that said outer ring can rotate freely and smoothly about any axis within said [spherical] housing;

said [spherical] housing having circular surface openings situated opposite each other and said inner ring of said coupler device having a circular hole which aligns with said surface openings as means for

insertion of a locking pin device to securely engage said double-ring coupler device within said [spherical] housing.

2. (New) An improved trailer hitching apparatus comprising:
first and second walls in opposed, spaced apart relation;
means attached to said first and second walls for mounting said apparatus to a towing vehicle;
an outer, substantially annulus-shaped ring having inner walls defining an opening, said inner walls having a concave configuration, said outer ring being configured to be received between said opposed first and second walls;
an inner, substantially annulus-shaped ring, said inner ring having an opening and an outer convex surface, said inner ring being positioned within said opening of said outer ring, said outer convex surface of said inner ring having substantially the same curvature as said inner concave walls of said outer ring, and said outer ring somewhat overlapping said inner ring to hold them together operationally such that said outer ring can rotate freely on any axis about said inner ring, said inner and outer rings together forming a coupler device;
means attached to said outer ring for attaching said coupler device to a trailer; and
a locking pin operatively associated with said opposed first and second walls and configured to be received through said opening in said inner ring when said coupling device is disposed between said opposed first and second walls so as to couple said coupling device to said means for mounting said apparatus to a towing vehicle.

3. (New) The trailer hitching apparatus of Claim 2, further comprising a housing, wherein said housing includes an opening

configured to receive an end of said coupler device therethrough, and wherein said first and second walls comprise opposed walls of said housing.

4. (New) The trailer hitching apparatus of Claim 2, wherein said locking pin extends along an axis, and wherein said housing comprises walls configured to guide said coupler device into a position such that said opening of said inner ring is aligned with said axis defined by said locking pin.

5. (New) The trailer hitching apparatus of Claim 3, wherein said housing comprises a curved inner surface.

6. (New) The trailer hitching apparatus of Claim 5, wherein said outer ring has an outer convex surface with the same general curvature as the curved inner surface of said housing such that said outer ring can rotate freely and smoothly about any axis within said spherical housing.

7. (New) The trailer hitching apparatus of Claim 3, wherein said housing is substantially hemispherical in shape, and wherein said opening is substantially circular in shape.

8. (New) The trailer hitching apparatus of Claim 7, wherein said housing has a substantially hemispherical inner surface, and wherein said outer ring has an outer convex surface with the same general curvature as the inner surface of said housing such that said outer ring can rotate freely and smoothly about any axis within said spherical housing.

9 (New) The trailer hitching apparatus of Claim 3,
wherein said housing comprises an aperture therethrough through
which an end of said locking pin is inserted, and
wherein said housing comprises an engagement means situated
opposite said aperture for engaging said end of said locking pin;
whereby when said locking pin extends through said aperture,
through said opening in said inner ring, and engages said engagement
means, said locking pin couples said coupling device to said housing.

10. (New) The improved trailer hitching apparatus of Claim 3,
further comprising a plurality of connected guide walls operatively
associated with said housing and converging rearward about said opening.